

WHAT IS CLAIMED IS:

1. A mobile communication terminal apparatus  
which alternately sets a wakeup period and a sleep  
period in a standby state and receives a radio signal  
5 transmitted from an active base station during  
synchronization establishment in a wakeup period,  
comprising:

detection means for detecting a reception quality  
of the radio signal in the wakeup period; and

10 setting means for setting a duration of a wakeup  
period as a next reception target in accordance with  
the detected reception quality.

2. A mobile communication terminal apparatus  
which alternately sets a wakeup period and a sleep  
15 period in a standby state and receives a radio signal  
transmitted from an active base station during  
synchronization establishment and a radio signal  
transmitted from a neighboring base station existing  
near the active base station in a wakeup period,  
20 comprising:

first detection means for detecting a reception  
quality of the radio signal from the active base  
station in the wakeup period;

second detection means for detecting a reception  
25 quality of the radio signal from the neighboring base  
station in the wakeup period;

third detection means for detecting a difference

between the reception quality detected by the first detection means and the reception quality detected by the second detection means; and

5        setting means for setting a duration of a wakeup period as a next reception target in accordance with the reception quality difference detected by the third detection means.

3. The apparatus according to claim 1, wherein the setting means includes;

10        comparison means for comparing the reception quality detected by the detection means with a first threshold;

15        first setting means for setting a duration of a wakeup period as a next reception target to a first time if it is determined on the basis of the comparison result obtained by the comparison means that the detected reception quality is not less than the first threshold; and

20        second setting means for setting the duration of a wakeup period as the next reception target to a second time longer than the first time if it is determined on the basis of the comparison result obtained by the comparison means that the detected reception quality is less than the first threshold.

25        4. The apparatus according to claim 3, wherein when the detection means is to receive a plurality of symbols of the radio signal and obtain an average of

reception qualities thereof, the first setting means sets a reception target symbol count of the radio signal in the wakeup period as the next reception target to a first value if the obtained average of the reception qualities is not less than the first threshold, and the second setting means sets the reception target symbol count of the radio signal in the wakeup period as the next reception target to a second value larger than the first value if the obtained average of the reception qualities is less than the first threshold.

5. The apparatus according to claim 2, wherein the setting means:

comparison means for comparing the reception quality difference detected by the third detection means with a threshold;

first setting means for setting a duration of a wakeup period as a next reception target to a first time if it is determined on the basis of the comparison result obtained by the comparison means that the detected reception quality is not less than the threshold; and

second setting means for setting the duration of the wakeup period as the next reception target to a second time longer than the first time if it is determined on the basis of the comparison result obtained by the comparison means that the detected

reception quality is less than the threshold.

6. The apparatus according to claim 5, wherein  
when the first and second detection means are to  
receive a plurality of symbols of radio signals from  
5 the active base station and the neighboring base  
station and obtain averages of reception qualities,

the first setting means sets a reception target  
symbol count of the radio signal from the active base  
station in the wakeup period as the next reception  
10 target to a first value if the detected reception  
quality difference is not less than the threshold, and

the second setting means sets the reception target  
symbol count of the radio signal from the active base  
station in the wakeup period as the next reception  
15 target to a second value larger than the first value if  
the detected reception quality difference is less than  
the threshold.

7. The apparatus according to claim 5, wherein  
when the first and second detection means are to  
20 receive a plurality of symbols of radio signals from  
the active base station and the neighboring base  
station and obtain averages of reception qualities,

the first setting means sets the reception target  
symbol count of the radio signal from the neighboring  
25 base station in the wakeup period as the next reception  
target to a third value if the detected reception  
quality difference is not less than the threshold, and

the second setting means sets the reception target symbol count of the radio signal from the neighboring base station in the wakeup period as the next reception target to a fourth value larger than the third value if  
5 the detected reception quality difference is less than the threshold.

8. The apparatus according to claim 5, wherein when the first and second detection means are to receive a plurality of symbols of radio signals from  
10 the active base station and the neighboring base station and obtain averages of reception qualities,

the first setting means sets, if the detected reception quality difference is not less than the threshold, the reception target symbol count of the  
15 radio signal from the neighboring base station in the wakeup period as the next reception target to a fifth value and sets the reception target symbol count of the radio signal from the active base station to a sixth value not less than the fifth value, and

20 the second setting means respectively sets, if the detected reception quality difference is less than the threshold, reception target symbol counts of radio signals from the neighboring base station and the active base station in the wakeup period as the next  
25 reception target to seventh and eighth values larger than the fifth and sixth values.

9. A mobile communication terminal apparatus

which alternately sets a wakeup period and a sleep period in a standby state and receives a radio signal transmitted from an active base station during synchronization establishment in a wakeup period,  
5 comprising:

first detection means for detecting a reception quality of the radio signal transmitted from the active base station in the wakeup period;

10 first comparison means for comparing the reception quality detected by the first detection means with a first threshold;

second comparison means for comparing the reception quality detected by the first detection means with a second threshold set to be lower than the first  
15 threshold;

first setting means for setting a duration of the wakeup period as the next reception target to a first time if it is determined on the basis of the comparison results obtained by the first and second comparison  
20 means that the detected reception quality is not less than the first threshold;

second setting means for setting the duration of the wakeup period as the next reception target to a second time longer than the first time if it is  
25 determined on the basis of the comparison results obtained by the first and second comparison means that the detected reception quality is less than the first

threshold and not less than the second threshold;

second detection means for detecting a reception quality of a radio signal transmitted from a neighboring base station existing near the active base station if it is determined on the basis of the comparison result obtained by the second comparison means that the detected reception quality is less than the second threshold;

third detection means for detecting a difference between the reception quality detected by the first detection means and the reception quality detected by the second detection means;

third comparison means for comparing the reception quality detected by the third detection means with a third threshold;

third setting means for setting the duration of the wakeup period as the next reception target to a third time longer than the second time if it is determined on the basis of the comparison result obtained by the third comparison means that the detected reception quality difference is not less than the third threshold; and

fourth setting means for setting the duration of the wakeup period as the next reception target to a fourth time longer than the third time if it is determined on the basis of the comparison result obtained by the third comparison means that the

detected reception quality difference is less than the third threshold.

10. The apparatus according to claim 9, wherein when the first and second detection means are to  
5 receive a plurality of symbols of radio signals from the active base station and the neighboring base station and obtain averages of reception qualities,

the first setting means sets a reception target symbol count of the radio signal from the active base  
10 station in the wakeup period as the next reception target to a first value if the obtained average of the reception qualities is not less than a first threshold, and

the second setting means sets the reception target symbol count of the radio signal from the active base  
15 station in the wakeup period as the next reception target to a second value larger than the first value if the obtained average of the reception qualities is less than the threshold.

20 11. The apparatus according to claim 9, wherein when the first and second detection means are to receive a plurality of symbols of radio signals from the active base station and the neighboring base station and obtain averages of reception qualities,

25 the third setting means sets the reception target symbol count of the radio signal from the active base station in the wakeup period as the next reception



target to a third value if the detected reception quality difference is not less than the third threshold, and

5       the fourth setting means sets the reception target symbol count of the radio signal from the active base station in the wakeup period as the next reception target to a fourth value larger than the third value if the detected reception quality difference is less than the third threshold.

10       12. The apparatus according to claim 9, wherein when the first and second detection means are to receive a plurality of symbols of radio signals from the active base station and the neighboring base station and obtain averages of reception qualities,

15       the third setting means sets the reception target symbol count of the radio signal from the neighboring base station in the wakeup period as the next reception target to a fifth value if the detected reception quality difference is not less than the third

20       threshold, and

      the fourth setting means sets the reception target symbol count of the radio signal from the neighboring base station in the wakeup period as the next reception target to a sixth value larger than the fifth value if  
25       the detected reception quality difference is less than the third threshold.

      13. The apparatus according to claim 9, wherein

when the first and second detection means are to receive a plurality of symbols of radio signals from the active base station and the neighboring base station and obtain averages of reception qualities,

5           the third setting means sets, if the detected reception quality difference is not less than the threshold, the reception target symbol count of the radio signal from the neighboring base station in the wakeup period as the next reception target to a seventh  
10           value and sets the reception target symbol count of the radio signal from the active base station to an eighth value not less than the seventh value, and

          the fourth setting means respectively sets, if  
15           the detected reception quality difference is less than the threshold, reception target symbol counts of radio signals from the neighboring base station and the active base station in the wakeup period as the next reception target to ninth and 10th values larger than the seventh and eighth values.